

f2  
Cont

surface concentric with said central axis, wherein each said outer groove comprises a generally arcuate cross-section and a [generally constant] radius measured from said central axis, and wherein the radius of each said outer groove is greater than the radius of each adjacent outer groove closer to said first end;

E1  
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a hollow tubular female connector having an annular recess adapted to receive and fit around said outer surface and a plurality of inner annular grooves formed on said annular recess concentric with said central axis, said recess forming a shoulder within said female connector adjacent said first end, wherein each said inner groove comprises a generally arcuate cross-section and a [generally constant] radius measured from said central axis, and wherein the radius of each said inner groove is greater than the radius of each adjacent inner groove closer to said shoulder, said inner grooves each corresponding to one of said outer grooves and forming therewith an arcuate race; and

a plurality of ball bearings received in each race to facilitate relative rotation of said male and female connectors about said central axis.

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~~Please cancel claim 2.~~

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~~In claim 13, at lines 8 and 16, delete "generally constant".~~

E2 Sub  
f3

19 (Amended).

A swivel joint comprising:

a central axis;

f3 cont  
a hollow tubular male connector having an outer annular surface, a first end and at least first and second outer annular grooves formed on the outer surface concentric with the central axis;

a hollow tubular female connector having an inner annular recess and at least first and second inner annular grooves formed on the inner recess concentric with the central axis;

wherein the inner recess is adapted to receive and overlap the outer surface such that each inner groove is in alignment with a corresponding outer groove to thereby define at least first and second arcuate races;

wherein the diameter of each arcuate race is greater than the diameter of each adjacent arcuate race closer to the first end of the male connector; and

Q2 cont  
a plurality of ball bearings received in each race to facilitate relative rotation of the male and female connectors about the central axis;

wherein the male and female connectors form a flow passage of the swivel joint.

20 (Amended). A swivel joint comprising:

a central axis;

a hollow tubular male connector having an annular outer surface and a first end;

a hollow tubular female connector having an annular recess adapted to rotatably receive the outer surface and the first end; and